

Abstract Submitted
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Analytical calculation of the susceptibility for three-level atomic systems HEUNG-RYOUL NOH, EUN HYUN CHA, Chonnam National University, HAN SEB MOON, Pusan National University — We present calculation of the analytical solutions of the susceptibility in Doppler-broadened three-level atomic systems using a diagrammatic method. The optical coherences are obtained from the optical Bloch equations for Ladder (upper or lower transition driven), V, and Lambda-type three-level atoms up to the first order in the probe field Rabi frequency and arbitrary order in the coupling field Rabi frequency, and are averaged over a Maxwell-Boltzmann velocity distribution. We obtain general analytical solutions of the susceptibility for four different three-level atomic systems where either the wavelengths of the probe and coupling fields are equal to or different from each other.

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